No Child Left Behind Act of 2001
Public Law 107-110

ESEA Title II, Part B

Montana

Mathematics and Science Partnership (MSP) Program

2008 Competitive Grant Application

Due Date: March 28, 2008

Linda McCulloch, Superintendent
Montana Office of Public Instruction
PO Box 202501
Helena, MT 59620-2501
www.opi.mt.gov

Mathematics and Science Partnerships Program
Competitive Grants 2008

GENERAL APPLICATION INFORMATION

TIMELINE	
February 1, 2008	Applications posted on OPI Web site and statewide dissemination.
February - 2008	Technical Assistance Workshops – See Web site for dates and times: http://www.opi.mt.gov/TitleIIPartB/Index.html
March 28, 2008	Applications postmarked by this date or received by the OPI by 5:00 p.m.
March 31 – April 18, 2008	Application Review Process
April 22, 2008	Grant Awards Announced
May - 2008	Mandatory Project Director and Partner Meeting in Helena
July 1, 2008	Project funds become available to awardees
This is a federal program and sub-grant reporting dates and requirements are subject to change as federal requirements change.	

I. General Grant information

Types of Grants available

Category 1 – Continuation Grants – Current MSP projects may apply for a one-year continuation grant in accordance with Section III E. Maximum funding for these continuation grants will be $50,000. Continuation grants that can demonstrate a high level of effectiveness in accordance with the criteria provided may be renewed for a second year. Maximum award amount for the second year will be $50,000. Up to five continuation grants will be awarded for the first year.

Category 2 – New Partnership Grants – New or existing partnerships may submit an application for a two-year grant in accordance with the criteria below. Maximum funding for these three-year grants will be $225,000 per year for each of three years. Up to three new partnership grants will be awarded for the first year.

Funds Available: Grant funds for either Category 1 and/or Category 2 will be available July 1, 2008. Grant funds are contingent upon availability of federal funds.

Unless otherwise stated, all requirements below apply to both Category 1 and Category 2 projects.

Review Process

The application review process will consist of (1) an external review by a panel of educators experienced in reading similar grant proposals who will score the applications; and (2) a review by an OPI team that will make necessary policy decisions regarding the award.

Appendix H provides the basic rubric that will be used as part of the review process. Along with the numerical score, each reviewer will list the strengths and weaknesses of the responses to each part. A grant accepted for funding may require project and budget revisions before final approval and funding is released. Applicants will be notified by April 22, 2008 as to whether a proposal has been selected for funding.

The original and four copies of the completed grant application must be postmarked by March 28, 2008.

Address your application packets to:

Al Mc Milin, Educator Quality Program Specialist
Office of Public Instruction
PO Box 202501
Helena, MT 59620-2501

Because of the possibility of electronic messaging failure, faxed applications will not be accepted.

PRIVATE SCHOOL PARTICIPATION

Funds awarded through these sub grants are subject to the requirements of Section 14503 of ESEA P.L. 108-382 (Participation by Private School Children and Teachers) and the regulations in 34 CFR 299, Subpart E. The statute and regulations require that sub grantees provide private schools in their area the opportunity for meaningful collaboration with the sub grantees during the planning process for any subsequent professional development activities. Further, the sub grantees must provide private school children and their teachers, or other educational personnel, the opportunity to receive services and benefits of the program on an equitable basis with public school children and teachers.

DURATION OF GRANTS

Grant awards beyond the first year are subject to federal appropriations, compliance with program requirements, demonstration of effectiveness, and timely reporting of findings and budgets by the partnerships.

SUPPLEMENT NOT SUPPLANT

Funds received shall be used to supplement, and not supplant, funds that would otherwise be used for proposed activities.

SUBSEQUENT OPPORTUNITY TO APPLY

The Office of Public Instruction (OPI) is committed to the competitive process required by this program. Awards will be made only for high-quality proposals that describe programs that attend to all competition requirements. There is no obligation on the part of the OPI to award all the available funds in the first round of competition. Pending the results of the initial grant competition, a second round of the competition may be announced after the 2008 awards.

TECHNICAL ASSISTANCE WORKSHOPS

The OPI will provide technical assistance workshops for applicants. The purpose of these workshops is to build applicant capacity to address the expectations of the grants and the activities eligible for funding. Category 2 grant applicants must attend at least one of the technical assistance workshops or have made alternative arrangements for receiving the information in order for the proposal to be considered.

Throughout the process, applicants with questions can contact:

Al Mc Milin, Educator Quality Program Specialist
Office of Public Instruction
Telephone: (406) 444-4436
E-mail: amcmilin@mt.gov

II. INTRODUCTION/BACKGROUND ON MSP PROGRAM

In January 2002, the No Child Left Behind Act of 2001 (NCLB) became law. ESEA Title II, Part B of this legislation authorizes the Mathematics and Science Partnership (MSP) competitive grant program. The purpose of this program is to improve the academic achievement of students in the areas of mathematics and science by encouraging State education agencies, institutions of higher education, local education agencies, elementary schools, and secondary schools to participate in programs that improve instruction and upgrade the status and stature of mathematics and science teaching.

The Montana Office of Public Instruction (OPI) is responsible for the administration of this program. This year $925,000 is available for the Title II Part B Mathematics and Science Partnerships competitive grant program. Funds will be awarded by the OPI to support successful proposals submitted by Montana Institutions of Higher Education (IHE), school districts, Montana regionalized educational service providers (Western Montana Partnership for Educational Resources (WMPER), Montana North Central Educational Services Region (MNCESR), Southern Montana Alliance for Resources and Training (SMART)) or nonprofit organizations (NPO), that have formed eligible partnerships as outlined in Section III B. that are focused on the improvement of mathematics and science instruction through the process of implementing high-quality professional development. School districts may also use Title I and Title II Part A funds to support the partnership's activities to demonstrate progress toward meeting the district partner's NCLB Title I Adequate Yearly Progress (AYP) goals.

III. MONTANA MATHEMATICS AND SCIENCE PARTNERSHIP PROGRAM DESCRIPTION

A. General Goals of the Montana MSP Program

Overall Goals:

Overall Goal 1: Improve student achievement in mathematics and science.

Overall Goal 2: Foster a commitment by districts and arts-and-science faculty that they have joint responsibility for improving mathematics and science instruction through the process of designing and implementing high-quality professional development. Such professional development must address the challenges of the unique Montana educational context.

Overall Goal 3: Support and coordinate with Montana's ongoing continuous improvement process as provided for in the Five-Year Comprehensive Education Plan (5YCEP) Admin. R. Mont. 10.55.601. Where applicable MSP projects need to support and focus on the goals of the American Indian Achievement Gap initiative.

Overall Goal 4: Provide professional development that has significant and meaningful mathematics and science content that models the instructional strategies that will enable teachers to teach in a manner that will improve student achievement in mathematics and science.

Overall Goal 5: Develop effective programs to prepare a math or science teacher from a participating LEA to return to a school or district and provide professional development to other math or science teachers, including (if applicable) a mechanism to integrate the teacher's experiences from a summer institute. Such a mechanism must also include a component that insures the involvement of building and district leadership.

Enabling Goals:

Enabling Goal 1: Focus on the education of mathematics and science teachers as a career-long process that continuously stimulates teachers' intellectual growth and upgrades teachers' knowledge and skills.

Enabling Goal 2: Bring mathematics and science teachers in elementary schools and secondary schools together with scientists, mathematicians, and engineers to increase the subject matter knowledge of mathematics and science teachers and improve teachers' teaching skills through the use of sophisticated laboratory equipment and work space.

Enabling Goal 3: Enhance the ability of the teacher to understand and use the challenging Montana Content and Performance Standards for math and science and to select appropriate curricula and materials.

Enabling Goal 4: Develop more concise and rigorous mathematics and science instructional resources that are precisely aligned to Montana and local academic content standards and with the standards expected for preparation of students for postsecondary study in engineering, mathematics and science.

Enabling Goal 5: Provide support for cohorts of math teachers, science teachers or combinations of math and science teachers made up of teachers within one eligible district; from a region or from statewide who will engage with IHE STEM faculty in a two-week summer institute and follow-up training. A cohort size needs to be restricted enough to concentrate resources to insure high-quality professional development.

Enabling Goal 6: Improve and expand the training of mathematics and science teachers in the effective integration of technology in to curricula and instruction.

Enabling Goal 7: Establish distance learning professional development programs for math and science teachers using curricula that are innovative, content-based, and based on scientifically based research that is both applicable and current.

Enabling Goal 8: Provide support for the rigorous evaluation of professional development programs provided by the Montana Title II Part B MSP awards and the subsequent impact on the academic achievement of the students of teachers in these programs.

B. Eligible Partnerships

An eligible partnership **must** include:

1. at least one high-need local educational agency (LEA) as defined in Section IV A.;
2. a science, technology, engineering or math (STEM) department of an institution of higher education including 4-year universities, 2-year technical colleges, tribal colleges, or community college; and
3. a teacher education department of an institution of higher education.

An eligible partnership may also include:

1. a Montana regionalized educational service provider (WMPER, MNCESR, SMART) if any LEA involved is served by that provider (a qualifying provider must be invited to participate);
2. additional LEAs;
3. an applicable NPO; and/or
4. an applicable private school.

C. Required Evaluation Support

A qualified project evaluator must be utilized by each recipient of either a Category 1 or 2 grant for the formative and summative evaluation of the project in accordance with federal and state guidelines.

D. Required Core Planning Team

All projects must have a core planning team in place to oversee the general design and implementation of the project. At a minimum the team will consist of:

1. a teacher from each of the targeted subject areas (math, science) and grade band (elementary, middle school, high) from one or more of the partner LEAs;
2. a building principal or district superintendent from one of the partner LEAs;
3. a participating STEM faculty member;
4. a science or math education faculty member; and
5. the project evaluator.

E. Required Focus for Category 1 Projects

Current MSP projects applying for a Category 1 continuation grant must design and implement an effective program that prepares a math or science teacher from a participating LEA to return to a school or district and provide professional development to other math or science teachers, including a mechanism to integrate the teacher's experience from a summer institute. The program developed must account for the following:

1. The direct involvement of building and if applicable, district administration;
2. The detailing of the knowledge and skills the returning teacher leader will need and how those are accounted for in the program;
3. The analysis and understanding of the "context" to which the teacher leader will be returning and the necessary modifications of the professional development that may be required given that context;
4. The analysis of the needed school and/or district infrastructure, applicable policy changes and other support resources and how those will be provided if not already present;
5. The outline of the support resources to be provided by the project; and
6. An outline of the process to monitor and adjust/refine the professional development during the implementation.

F. Required Focus for Category 2 Projects

For this cycle of MSP grants, the Montana Office of Public Instruction seeks to develop orientation and training models that support the newly revised Montana Content and Performance Standards in Science and to provide cost-effective and efficient ways to deliver on-going science content knowledge to practicing teachers in the field. These grants will be using what is now referred to in the literature as a "blended learning" model. This model combines the use of face-to-face workshops with online learning that complements and extends the initial training of those workshops and also supports the subsequent implementation goals of the training.

In general, all Category 2 projects will design and provide professional development that:

1. enhances the individual teacher's science content knowledge;
2. enhances the teacher's knowledge and understanding of the newly revised Montana Content and Performance Standards in Science;
3. provides knowledge, understanding and skills associated with inquiry pedagogy which is at the heart of those standards;
4. provides training in how the teacher can maximize the implementation of new inquiry pedagogy within the structure of the local district science curriculum and utilizing existing science materials and available instructional time;
5. is supported by an online technology model; and
6. provides opportunity for the teachers to learn from and interact with STEM faculty.

In particular all Category 2 projects will:

1. identify and target elementary endorsed self-contained classroom teachers in grades 3-6 who do not have any additional endorsements in a specific science content area;
2. identify and target a specific geographic region from which to select participating LEAs in the project. At least one third of identified teacher cohorts must come from small K-12 (Class C) districts and rural (single or small multiple grade) elementary schools;
3. determine an exact cohort size that reflects the capacity of the project to deliver the required quality, job-embedded professional development but at a minimum will serve at least 30 teachers per cohort. The project will provide for at least two cohorts of teachers – Cohort 1 (development of delivery system and initial training cycle - 2008-10) and Cohort 2 (initial training cycle - 2009-11);
4. work with an education department from a partner institution of higher education to provide training for the inquiry pedagogy identified in the standards and based upon the continuum in Appendix G.
5. use teacher-directed learning units called SciPacks, provided free by the National Science Teachers Association (NSTA) as the basis for increasing teacher science content knowledge of physics, life sciences, and earth sciences (a project may request approval for a content area not covered by the SciPacks that they wish to use from another online source, or develop to use for the online training to address this component of the professional development requirements);
6. provide workshops conducted by STEM and educational faculty in support of the SciPack modules and other aspects of the professional development. These workshops must be deliverable at more than one location and/or at multiple times;
7. provide support for the subsequent implementation of the professional development in the teacher's individual classroom utilizing the online support system and involving STEM and educational faculty and/or mentors/coaches; and
8. include an option for the teacher to choose to receive renewal units and/or college credit.

The above are intended to give potential applicants a general idea of what the vision is for these new Category 2 projects. More detail will be provided at the technical assistance workshops.

IV. Other Applicable Definitions

A. High-Need School District

The term "high-need school district" means a school district that (1) serves no fewer than 10,000 children from families with incomes below the poverty line or a school district for which 20 percent of the children are from families with incomes below the poverty line; OR (2) has a high percentage of teachers not teaching in the academic subjects or grade levels that the teachers were trained to teach; OR has a high percentage of teachers with Emergency Authorization of Employment or Alternative License when compared to other districts in the state.

B. Highly Qualified Teacher

The Montana Office of Public Instruction defines the term "highly qualified" to mean a teacher who is fully licensed and endorsed in the field in which he/she teaches.

V. Proposal Requirements and Preparation of Application

A. Cover Page – Use the form provided in Appendix A of the RFP. The cover page is the first page of the application.

B. Abstract – Provide an abstract of the proposal that briefly and concisely describes the program to be implemented and summarizes the intended results of the program. Projects need to keep this abstract between 200-300 words.

C. Partnership Operational Narrative

The partnership narrative must address each of the following items.

1. Partnership Makeup and Core Planning Team – The partnership narrative should summarize the makeup of the partnership and required planning team and how they plan to operate.
2. Research Base – The partnership narrative should discuss and cite the current state of knowledge relevant to the proposed program. This brief literature review should clearly indicate why the proposed activities were selected or designed. If the proposal builds on prior grant or other project work, the narrative should indicate what was learned from this work and how these lessons are incorporated in the proposed program.
3. Needs Assessment – A Category 2 partnership narrative should indicate a clear understanding of results of an assessment of the teacher quality and professional development needs with respect to the goals and objectives of this grant and how the goals and activities of the partnership's proposed programs are directly related to those needs.
4. Project Plan – The partnership narrative must clearly describe the goals and objectives (please include a logic map) for the program and a detailed summary of the responsibility of each partner. The narrative should include time frame, resources, responsible persons and evaluation components. In addition, provide descriptions of the number, type, duration and scope of planned professional development work, including the number of teachers engaged. (A table format is suggested for laying out this information.)
5. Alignment with Montana Standards and 5YCEP Process – For Category 1 proposals, the partnership narrative should clearly explain the tie between the professional development, the standards and the 5YCEP process.

6. Coordination with Other Existing Programs and Initiatives – Where applicable, the partnership narrative should clearly explain how the project is coordinating with other improvement efforts and projects in the respective schools and districts including the American Indian Achievement Gap initiative.
7. Management Capability – The partnership narrative must clearly demonstrate that the partnership has the capability of managing the program, organizing the work and meeting deadlines.
8. Communication – The partnership narrative needs to clearly establish how the project will utilize the electronic mediums (Web site, e-mail, videoconferencing, etc.) to provide for ongoing communication and interaction between the participants, faculty and partners.
9. Leadership Involvement – The partnership narrative must clearly indicate how the project will involve building and district leadership.
10. Implementation and Sustainability of Professional Development – A partnership narrative must clearly describe how the project plans to insure support for implementation and sustainability of the training provided participants once they return to their schools and districts.
11. Project Continuation – For Category 2 proposals the partnership narrative must describe a clear, detailed and comprehensive plan as to how the partnership might continue the project activities beyond the period of the original grant.

D. PARTNERSHIP EVALUATION AND ACCOUNTABILITY PLAN

1. The partnership's plan must describe how the effectiveness of the partnership itself will be assessed both during the development and operation time frames.
2. The partnership's plan must describe how it will evaluate the overall success of the project (summative). In general, the partnership plan must explain how it will determine whether the partnership activities have increased teacher content knowledge and are contributing to the improvement of student achievement in math and/or science. In particular, the plan must include measurable objectives to increase the number of science teachers participating in the professional development activities and to improve their content knowledge and pedagogical practices; and include measurable objectives for improved student academic achievement on Montana and district science assessments.
3. The partnership's plan must include a discussion of the feasibility of incorporating an experimental design with random assignment to treatment and control groups, matched comparison groups or non-matched comparison groups as the central part of their evaluation design framework. If none of the three options are feasible the narrative should summarize why each was not.
4. The partnership plan must also describe how it will measure progress toward meeting its objectives (formative). Mid-term and annual reports on progress related to this outcome will be reviewed by the project evaluator and provided to the Montana Office of Public Instruction on an annual basis.
5. The partnership needs to reference the professional development evaluation model developed by Thomas Guskey attached at Appendix F as a guideline for evaluating the professional development project. Evaluation of each of the applicable five levels needs to be reflected in the overall evaluation plan as well as part of the logic map. The narrative must be clear on what process and instruments will be used for each component and if and how the instrument's validity and reliability will be determined.
6. Each partnership must describe how the results of various formative and summative evaluations will be disseminated to the partnership and to other possible venues including method and time line for dissemination.
7. The Montana Office of Public Instruction will provide ongoing training and support for projects that use Montana Surveys of Enacted Curriculum as part of their assessment portfolio.

E. Partnership Budget and Budget Narrative

The budget narrative needs to be clearly tied to the plan summarized in the Partnership Operational Narrative. The budget narrative should describe the basis for determining the amounts shown on the overall project budget page and for each of the partner funding request pages submitted (Appendix D). Include a budget for each of the three years of the proposed program. The Category 1 partnership needs to set aside at least $3,000 and the Category 2 partnership at least $5,000 for travel to state and regional MSP conferences for each year of the project.

F. Proposal Appendices

The proposal appendices should include only the following documents:

1. Cover Page,
2. Statement of Assurances (prime applicants other than school districts must contact OPI for proper common assurance forms required for submission with the proposal) ,
3. Partnership Identification Forms,
4. Budget Forms,
5. Letter of Commitment from Each Partner, and
6. Partner Funding Request for Each Partner.

VI. Proposal Review Process

A. General Guidelines

As proposals are received at the OPI, they will be reviewed by staff for completeness and compliance with the requirements set forth in ESEA Title II, Part B of NCLB to determine applicant eligibility. Any questions about significant omissions from a proposal or about applicant eligibility will be referred to the proposing organization. If, in the judgment of the OPI, a proposal is late, significantly incomplete, or an applicant cannot establish its eligibility, the proposal will be omitted from consideration. The decision of the OPI is final. Applicants submitting proposals that are withdrawn due to incompleteness or ineligibility will be notified in writing.

A review panel will evaluate eligible applications on the basis of the required application components and the established criteria. The review panel will assess each eligible application and make recommendations to the OPI in the areas of program, budget, and efficacy. The review panel's scores and recommendations will be the primary determinant of successful proposals and will form the basis for negotiation and final selection. Following the review, the OPI staff will contact eligible project directors to discuss any modifications of the project plan that may be required. The OPI will seek to fund those proposals that show the most promise for successful professional development programs.

B. Scoring

The panel of reviewers will assess each plan. Each aspect or part of the plan will be worth a set number of points (See charts below). Individual panel members will evaluate each aspect and assign points up to the maximum for each aspect. They will be asked to list strengths and weaknesses for each aspect as well. Finally, the OPI review team will review the scored applications, add in bonus points earned, total the scores, and then make necessary policy decisions regarding the successful awards to grantees.

Category 1 Grant – Proposal Aspect	Maximum Points
Overall Design and Efficacy of Project Plan	25
Makeup, Commitment and Capacity of Partnership	10
Quality of Evaluation and Accountability Plan	25
Budget and Cost Effectiveness	15
Bonus Points (OPI Assigned)	20
Total Possible Points	95

Category 2 Grant – Proposal Aspect	Maximum Points
Overall Design and Efficacy of Project Plan	25
Makeup, Commitment and Capacity of Partnership	10
Quality/Level of Implementation and Sustainability Support for the Participants	20
Quality of Evaluation and Accountability Plan	25
Budget and Cost Effectiveness	15
Bonus Points (OPI Assigned)	25
Total Possible Points	120

VII. GRANT PROPOSALS – PREFERENCES

CATEGORY 1 GRANTS

1. Bonus points (1-5) will be given to projects that incorporate increased STEM faculty interaction with the K-12 classroom teacher.
2. Bonus points (1-5) will be given to projects that provide a strong emphasis on building/enhancing professional learning communities in partner schools and districts.
3. Bonus points (1-5) will be given to projects that provide a substantial training component for participating teachers in the effective integration of technology in to curricula and instruction.
4. Bonus points (1-5) will be given to projects that link project outcomes with subsequent considerations for informed modifications in IHE pre-service math and/or science education curriculum.

CATEGORY 2 GRANTS

1. Bonus points (1-10) will be given to projects that are able to build in an experimental design with random assignment to treatment and control groups, matched comparison groups **or** non-matched comparison groups as the central part of the project's evaluation design framework.
2. Bonus points (1-5) will be given to projects that provide a strong emphasis on building/enhancing professional learning communities in partner schools and districts.
3. Bonus points (1-5) will be given to projects that provide a substantial training component for participating teachers in the effective integration of technology in to curricula and instruction.
4. Bonus points (1-5) will be given to projects that link project outcomes with subsequent considerations for informed modifications in IHE pre-service science education curriculum.

MONTANA MATHEMATICS AND SCIENCE PARTNERSHIP (MSP) PROGRAM APPLICATION

Applying Institution or Organization: _____

Program Title: _____

Check One: Category 1 Grant _____ Category 2 Grant _____

Program Director

Name: _____

Title: _____

Address: _____

_____ ZIP Code: _____

Telephone: _____ Fax: _____

E-Mail: _____

Amount of MSP Funds Requested: $ _____

Number of Teachers to be Served Directly: _____

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his/her knowledge the information in this application is correct, that the filing of this application is duly authorized by the governing body of this organization, or institution, and that the applicant will comply with the attached statement of assurances.

_____ _____

Typed or Printed Name of Authorized Official Grants Officer or Superintendent of Fiscal Agent | Title

_____ _____

Signature of Authorized Official | Date

Appendix B - Research and Policy Base

Montana Office of Public Instruction
ESEA Title II, Part B – Mathematics and Science Partnership (MSP) Program

INTRODUCTION AND BACKGROUND FOR THE GRANT'S PROFESSIONAL DEVELOPMENT MODEL

Current research supports the belief that in order to have a positive and lasting impact on classroom instruction and student learning, high-quality professional development programs must contain the following key elements. Professional development programs created through this grant need to provide for these same elements.

1. The programs need to be classroom focused and enhance the capacity of local teachers to enact curricular reforms that produce higher student achievement in core academic areas.
2. The programs need to recognize that effective and lasting changes in professional beliefs and practices require time, multiple learning opportunities, and appropriate and adequate organizational support.
3. The programs need to both facilitate the growth of a teacher's subject matter knowledge and increase a teacher's understanding and use of effective, scientifically research based instructional strategies.
4. The programs need to provide activities and training that reflect sound research and theory but are clearly grounded in the practice of teaching and learning.
5. The programs need to employ a variety of professional development styles that both engage the individual teacher's strengths but also support and enhance the development of a "learning community" where teachers work in a collaborative and mutually supportive environment.
6. The programs need to be of sufficient duration (a minimum of 30 hrs.) to actively engage the participant and insure lasting impact.
7. The programs need to connect with and build upon, improvement efforts already ongoing in the participant's school and district.
8. The programs need to allow the participant to utilize curriculum and classroom materials from the participant's school and district.
9. The programs need to provide for specific and targeted resources to insure there is adequate support for implementation and subsequent sustainability of the professional development.
10. The programs need to emphasize the involvement of school and district administration.
11. The programs need to be data driven.

Professional Development

As defined by ARM 10.55.714, "professional development" means instructional related activities that:

1. are focused on teachers as central to student learning, yet include all other members of the school community;
2. are focused on individual, collegial, and organizational improvement;
3. respect and nurture the intellectual and leadership capacity of teachers, principals and others in the school community;
4. reflect proven scientifically based research and practice in teaching, learning and leadership;
5. enable teachers to develop further experience in state content standards and assessment, teaching strategies, use of technologies, and other essential elements in teaching to high standards;
6. promote continuous inquiry and improvement embedded in the daily life of schools;
7. are ongoing and sustained;

8. are planned collaboratively by those who will participate in and facilitate that development;
9. requires substantial time and resources;
10. are driven by a coherent long-term plan; and
11. are evaluated ultimately on the basis of their impact on teacher effectiveness and student learning, and this assessment guides subsequent professional development efforts.

Scientifically Based Research

The term "scientifically based research" means research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs and includes research that:

1. employs systematic, empirical methods that draw on observation or experiment and involve rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn;
2. relies on measurements or observational methods that provide reliable and valid data across evaluators and observers, across multiple measurements and observations, and across studies by the same or different investigators;
3. is evaluated using experimental or quasi-experimental designs in which individuals, entities, programs, or activities are assigned to different conditions, with appropriate controls to evaluate the effects of the condition of interest and with a preference for random-assignment experiments or other designs to the extent that those designs contain within-condition or across-condition controls;
4. ensures that experimental studies are presented in sufficient detail and clarity to allow for replication or, at minimum, to offer the opportunity to build systematically on their findings; and
5. has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective and scientific review.

Appendix C – Partnership Identification Form

Montana Office of Public Instruction
ESEA Title II, Part B – Mathematics and Science Partnership (MSP) Program

PARTNERSHIP IDENTIFICATION FORM

Include a Partnership Identification Form for each of the partner institutions/organizations.

PARTNER INSTITUTION: _____

Contact Name/Title: _____

Contact Mailing Address: _____

_____

_____

Telephone: _____

Fax: _____

E-Mail: _____

Type of Institution/Organization: _____

Partner School District Demographics (If Applicable):

Montana Office of Public Instruction
ESEA Title II, Part B – Mathematics and Science Partnership (MSP) Program

Budget
Partnership Funding Request

Program Title:

Direct Cost Requested for Partner	YR 1	YR 2	YR 3	TOTAL
1. Salaries & Wages (Professional and Clerical)				
2. Employee Benefits				
3. Travel in State				
4. Travel Out of State				
5. Materials and Supplies				
6. Consultants and Contracts				
7. Teacher Stipends				
8. Equipment (Purchase)				
9. Other (Equipment Rental, Printing, etc.)				
B. Indirect Costs* (if appropriate)				
Total Budget				
OPI Use Only: Approved By/Date				

*The indirect cost rate shall not exceed the indirect cost rate for the partner with the lowest indirect cost rate.

This form is a required element of the grant application. Justification for each of the categories shall be included in the budget narrative portion of the application. Modifications to the grant must be reflected over the three years of the grant and included as part of the annual reporting. Annual reapplication is required for continuation of funding for all grants. For reporting, an itemized breakdown of these budget categories and a budget narrative explaining how each line item was calculated and the actual total project cost share must be included.

Budget
Partner Funding Request

Name of Partner Organization:

On this form, list only the funding this partner will receive from the grant.

Direct Cost Requested for Partner	YR 1	YR 2	YR 3	*TOTAL*
1. Salaries & Wages (Professional and Clerical)				
2. Employee Benefits				
3. Travel in State				
4. Travel Out of State				
5. Materials and Supplies				
6. Consultants and Contracts				
7. Teacher Stipends				
8. Equipment (Purchase)				
9. Other (Equipment Rental, Printing, etc.)				
Total Funding to Partner from Grant				

STATEMENT OF ESEA TITLE II, PART B ASSURANCES

Should an award of funds from the Mathematics and Science Partnerships (MSP) Program be made to the applicant in support of the activities proposed in this application, the authorized signature on the cover page of this application certifies to the OPI that the authorized official will:

1. Upon request, provide the Montana Office of Public Instruction with access to records and other sources of information that may be necessary to determine compliance with appropriate federal and state laws and regulations.

2. Conduct educational activities funded by this project in compliance with the following federal laws:
   a. Title VI of the Civil Rights Act of 1964;
   b. Title IX of the Education Amendments of 1972;
   c. Section 504 of the Rehabilitation Act of 1973;
   d. Age Discrimination Act of 1975;
   e. Americans with Disabilities Act of 1990; and
   f. Improving America's Schools Act of 1994.

3. Use grant funds to supplement and not supplant funds from nonfederal sources.

4. Take into account during the development of programming the need for greater access to and participation in the targeted disciplines by students from historically underrepresented and underserved groups.

5. Submit, in accordance with stated guidelines and deadlines, all program and evaluation reports required by the U.S. Department of Education and the Montana Office of Public Instruction.

6. The applicant will retain records of the program for five years and will allow access to those records for purposes of review and audit.

Signature Information for Appendix A Cover Page with School Districts as Prime Applicant: The Board of Trustees submitted a Common Assurances form to the Office of Public Instruction for the 2006-2007 school year, and no circumstances affecting the validity of the assurances have changed since its submittal. Further, the Board of Trustees has certified that the Common Assurances for Federal Programs are accepted as the basic conditions for local participation and assistance in operation of this Title II Part B MSP Program.

Appendix F – Levels of PD Evaluation

Professional Development Evaluation

Adapted from Guskey, Thomas R. *Evaluating Professional Development* Thousand Oaks, CA: Corwin Press, Inc, 2000

EVALUATION LEVEL	QUESTIONS TO BE ANSWERED	MEASURE	WHAT IS MEASURED?	HOW WILL INFORMATION BE USED?
1 PARTICIPANTS' REACTIONS	• Did they like it? • Was their time well-spent? • Did the material make sense? • Will it be useful? • Was the leader knowledgeable and helpful? • Were the refreshments fresh and tasty? • Was the room the right temperature?	• Questionnaires or surveys administered at the end of the session	• Initial satisfaction with the experience	• To improve professional development program design and delivery
2 PARTICIPANTS' LEARNING	• Did participants acquire the intended knowledge and skills?	• Paper-and-pencil instruments • Simulations • Demonstrations. • Participant reflections (oral and/or written). • Participant portfolios	• New knowledge and skills of participants	• To improve instructional practice • ***To demonstrate the impact of professional development***
3 ORGANIZATIONAL SUPPORT AND CHANGE	• Were sufficient resources made available? • Were problems addressed quickly and efficiently? • Was implementation advocated, facilitated, and supported? • Were successes recognized and shared? • Was the support public and overt? • What was the impact on the organization? • Did it affect organizational climate and procedures?	• Minutes from follow-up meetings • Questionnaires • Structured interviews with participants and district or school administrators • District and school records • Participant portfolios	• The organization's advocacy, support, accommodation facilitation, and recognition	• To document and improve organizational support • To inform future change efforts
4 PARTICIPANTS' USE OF NEW KNOWLEDGE AND SKILLS	• Did participants effectively apply the new knowledge and skills?	• Questionnaires • Structured interviews with participants and their supervisors • Participant reflections (oral and/or written) • Participant portfolios • Direct observations • Video or audiotapes	• Degree and quality of implementation.	• To document and improve the implementation of program content • ***To demonstrate the impact of professional development***
5 STUDENT LEARNING OUTCOMES	• What was the impact on the students? • Did it affect student performance or achievement? • Did it influence student's physical or emotional well-being? • Are students more confident as learners? • Is Student Attendance improving? • Are dropouts decreasing?	• Student records • School records • Questionnaires • Structured interviews with students, parents, teachers, and/or administrators • Participant portfolios	• Student learning outcomes • Cognitive (performance and achievement) • Affective (attitudes and dispositions) • Psychomotor (skills and behaviors)	• To focus and improve all aspects of program design, implementation, and follow-up • ***To demonstrate the overall impact of professional development***

Appendix G – Montana K-12 Content Standards and Performance Descriptors for Science – Inquiry Continuum

Adapted from National Research Council *Inquiry and the National Science Education Standards* Washington D.C.: National Academy Press, 2000

Essential Features of Classroom Inquiry and Their Variations				
Essential Feature	**Variations**			
1. Learner engages in scientifically oriented questions	Learner poses a question	Learner selects among questions, poses new questions	Learner sharpens or clarifies question provided by teacher, materials, or other source	Learner engages in question provided by teacher, materials, or other source
2. Learner gives priority to **evidence** in responding to questions	Learner determines what constitutes evidence and collects it	Learner directed to collect certain data	Learner given data and asked to analyze	Learner given data and told how to analyze
3. Learner formulates **explanations** from evidence	Learner formulates explanations after summarizing evidence	Learner guided in process of formulating explanations from evidence	Learner given possible ways to use evidence to formulate explanation	Learner provided with evidence and how to use evidence to formulate explanation
4. Learner connects explanations to scientific knowledge	Learner independently examines other resources and forms the links to explanations	Learner directed toward areas and sources of scientific knowledge	Learner given possible connections	
5. Learner communicates and justifies explanations	Learner forms reasonable and logical argument to communicate explanations	Learner coached in development of communication	Learner provided broad guidelines to use to sharpen communication	Learner given steps and procedures for communication

More ← Amount of Learner Self-Direction → Less

Less ← Amount of Direction from Teacher or Material → More

PARTNERSHIP – CATEGORY 1 AND CATEGORY 2 GRANTS

0 – 2 Points Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:	3 - 5 Points Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:
1) There is not a complete description of the partnership including: a. who are the partners b. how it was developed and is there evidence of ongoing collaboration in the design and implementation of the partnership c. how the duties and responsibilities are shared between the partners d. how will the communication be facilitated between the partners 2) There is little or no evidence that there is sufficient capacity in the partnership to organize and manage the project 3) There is no evidence that the required core planning team will be assembled 4) There is not a complete description of how the effectiveness of the partnership will be assessed both during the development and operation time frame	1) There is a complete description of the partnership including: a. who are the partners b. how it was developed and is there evidence of ongoing collaboration in the design and implementation of the partnership c. how the duties and responsibilities are shared between the partners d. how will the communication be facilitated between the partners 2) There is evidence that there is sufficient capacity in the partnership to organize and manage the project 3) There is evidence that the required core planning team will be assembled 4) There is a complete description of how the effectiveness of the partnership will be assessed both during the development and operation time frame

INITIAL SCORE: _____ FINAL SCORE - WEIGHT FACTOR (2X THE INITIAL SCORE): _____

IMPLEMENTATION SUPPORT AND SUSTAINABILITY FOR PARTICIPANTS - CATEGORY 2 GRANTS ONLY

0 – 2 Points Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, all of the critical attributes listed below:	3 - 5 Points Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:
1) There is not a complete description of how the project will provide for implementation support and sustainability for the inquiry pedagogy that is part of the professional development training including: a. how time will be provided for ongoing study, practice, practice with feedback b. how the project will work with teachers to adapt applicable district science curriculum and instructional units to support inquiry pedagogy c. how the project will facilitate targeted professional development for teachers who need more intensive or in-depth assistance with the classroom implementation d. how the project will insure the meaningful involvement of school and district leadership 2) There is not a description of how continued support for the participants might occur beyond the life of the grant	1) There is a complete description of how the project will provide for implementation support and sustainability for the inquiry pedagogy that is part of the professional development training including: a. how time will be provided for ongoing study, practice, practice with feedback b. how the project will work with teachers to adapt applicable district science curriculum and instructional units to support inquiry pedagogy c. how the project will facilitate targeted professional development for teachers who need more intensive or in-depth assistance with the classroom implementation d. how the project will insure the meaningful involvement of school and district leadership 2) There is a description of how continued support for the participants might occur beyond the life of the grant

INITIAL SCORE: _____ FINAL SCORE - WEIGHT FACTOR (4X THE INITIAL SCORE): _____

EVALUATION AND ACCOUNTABILITY PLAN – CATEGORY 1 GRANTS

0 – 2 Points Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:	3 - 5 Points Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:
1) There is not a complete description of how the project will insure the development of an effective and comprehensive assessment and accountability process (including applicable measurable objectives) in the following component areas: a. Increasing the involvement of math and science teachers b. content knowledge professional development c. instructional strategy professional development including implementation assessment d. assessing the ability of teachers to understand and use the challenging local and Montana Content and Performance Standards	1) There is a complete description of how the project will insure the development of an effective and comprehensive assessment and accountability process (including applicable measurable objectives) in the following component areas: a. Increasing the involvement of math and science teachers b. content knowledge professional development c. instructional strategy professional development including implementation assessment d. assessing the ability of teachers to understand and use the challenging local and Montana Content and Performance Standards
2) All applicable levels of the Guskey model were not addressed	2) All applicable levels of the Guskey models were addressed
3) There is not a complete description of what formative evaluation process will be used during implementation to identify barriers and facilitating events or structures that informs the project's ongoing planning and implementation efforts	3) There is a complete description of what formative evaluation process will be used during implementation to identify barriers and facilitating events or structures that informs the project's ongoing planning and implementation efforts
4) There is not a complete description of how the project will communicate and disseminate information on the project and subsequent professional development activities to appropriate and applicable constituencies	4) There is a complete description of how the project will communicate and disseminate information on the project and subsequent professional development activities to appropriate and applicable constituencies

INITIAL SCORE: _____ FINAL SCORE - WEIGHT FACTOR (5X THE INITIAL SCORE): _____

EVALUATION AND ACCOUNTABILITY PLAN – CATEGORY 2 GRANTS

0 – 2 Points Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:	3 - 5 Points Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:
1) There is not a complete description of how the project will insure the development of an effective and comprehensive assessment and accountability process (including applicable measurable objectives) in the following component areas: a. Increasing the involvement of science teachers b. content knowledge professional development c. instructional strategy (inquiry) professional development including implementation assessment d. assessing the ability of teachers to understand and use the challenging local and Montana Content and Performance Standards e. operation of the project delivery system - workshop, online, and materials development	1) There is a complete description of how the project will insure the development of an effective and comprehensive assessment and accountability process (including applicable measurable objectives) in the following component areas: a. Increasing the involvement of science teachers b. content knowledge professional development c. instructional strategy (inquiry) professional development including implementation assessment d. assessing the ability of teachers to understand and use the challenging local and Montana Content and Performance Standards e. operation of the project delivery system - workshop, online, and materials development
2) All applicable levels of the Guskey model were not addressed	2) All applicable levels of the Guskey model were addressed
3) There is not a complete description of what formative evaluation process will be used during implementation to identify barriers and facilitating events or structures that informs the project's ongoing planning and implementation efforts	3) here is a complete description of what formative evaluation process will be used during implementation to identify barriers and facilitating events or structures that informs the project's ongoing planning and implementation efforts
4) There is not a complete description of how the project will communicate and disseminate information on the project and subsequent professional development activities to appropriate and applicable constituencies	4) There is a complete description of how the project will communicate and disseminate information on the project and subsequent professional development activities to appropriate and applicable constituencies

INITIAL SCORE: _____ FINAL SCORE - WEIGHT FACTOR (5X THE INITIAL SCORE): _____

BUDGET AND COST EFFECTIVENESS – CATEGORY 1 AND CATEGORY 2 GRANTS

0 – 2 Points Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:	3 - 5 Points Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:
1) There is not a complete description outlining the basis for determining the amounts shown on the budget	1) There is a complete description outlining the basis for determining the amounts shown on the budget
2) The budget is not in alignment with the activities described in the various parts of the grant proposal narrative	2) The budget is aligned with the activities described in the various parts of the grant proposal narrative
3) The amount assigned to a given portion of the budget seems either excessive or insufficient given the goals of the project	3) The amount assigned to each portion of the budget is sufficient given the goals of the project
4) All the required budget forms were not included	4) All the required budget forms were included and complete

INITIAL SCORE: _____ FINAL SCORE - WEIGHT FACTOR (3X THE INITIAL SCORE): _____

OVERALL DESIGN AND EFFICACY OF PROJECT PLAN - CATEGORY 1 GRANTS

0 – 2 Points Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:	3 - 5 Points Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:
1) There is not a complete description of how the project will address all the focus criteria as outlined in Section III E.	1) There is a complete description of how the project will address all the focus criteria as outlined in Section III E.
2) There is not a complete description of the research base for the project components	2) There is a complete description of the research base for the project components
3) There is not a complete description of a process to identify and build on previous professional development work in the schools and districts	3) There is a complete description of a process to identify and build on previous professional development work in the schools and districts
4) There is not a complete description of how the ongoing goal of increasing teachers' understanding of the critical role local and Montana Content and Performance Standards in the design and delivery of effective instruction will be achieved	4) There is a complete description of how the ongoing goal of increasing teachers' understanding of the critical role local and Montana Content and Performance Standards in the design and delivery of effective instruction will be achieved
5) All applicable sections of the partnership operational narrative were not addressed	5) All applicable sections of the partnership operational narrative were adequately addressed
6) The likelihood of the overall plan being effective is low.	6) The likelihood of the overall plan being effective is moderate to high.

INITIAL SCORE: _____ FINAL SCORE - WEIGHT FACTOR (5X THE INITIAL SCORE): _____

OVERALL DESIGN AND EFFICACY OF PROJECT PLAN - CATEGORY 2 GRANTS

0 – 2 Points Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:	3 - 5 Points Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:
1) There is not a complete description of how the project will address all the focus criteria as outlined in Section III F.	1) There is not a complete description of how the project will address all the focus criteria as outlined in Section III F
2) There is not a complete description of the research base for the project components	2) There is a complete description of the research base for the project components
3) There is not a complete description of a process to identify and build on previous professional development work in the schools and districts	3) There is a complete description of a process to identify and build on previous professional development work in the schools and districts
4) There is not a complete description of how the ongoing goal of increasing teachers' understanding of the critical role local and Montana Content and Performance Standards in the design and delivery of effective science instruction will be achieved	4) There is a complete description of how the ongoing goal of increasing teachers' understanding of the critical role local and Montana Content and Performance Standards in the design and delivery of effective science instruction will be achieved
5) All applicable sections of the partnership operational narrative were not addressed	5) All applicable sections of the partnership operational narrative were adequately addressed
6) The likelihood of the overall plan being effective is low	6) The likelihood of the overall plan being effective is moderate to high.

INITIAL SCORE: _____ FINAL SCORE - WEIGHT FACTOR (5X THE INITIAL SCORE): _____